

## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A computer-based printing system comprising:

a ~~computing~~computer device ~~containing print data and capable of initiating a print job~~;

one or more output devices accessible from said ~~computing~~computer device for rendering a print job, said output devices having one or more corresponding printer drivers in support thereof;

means for initiating said print job, said means indicating that said print data is to be despoiled to one or more of said output devices, said print job comprising ~~said~~ print data;

a virtual printer driver supported by said printing system and called by said means for initiating said print job, wherein said virtual printer driver determines and selects which of said output devices to send at least a portion of said print job for rendering, said determination based upon a best fit analysis between said output devices and one or more options and requirements of said print job, without manual enumeration of each of said output devices; and

a print control assembly in communication with said ~~computing~~computer device, said print control assembly capable of storing, processing and directing a set of printing instructions as received from said virtual printer driver by said virtual printer driver switching a device context to corresponding printer drivers of said selected output devices, an application or background process writing said printing instructions to said corresponding printer drivers, which spool said print data to a spooler that despoils said print data to a port manager or a print processor.

2. (Original) The printing system of claim 1, wherein said printing system comprises a networked environment.

3. (Original) The printing system of claim 1, wherein said printing system comprises a peer-peer environment.

4. (Currently Amended) The printing system of claim 1, wherein said printing system comprises a local environment, wherein said ~~computing~~computer device is directly coupled to said output devices, ~~thus defining said printing system.~~

5. (Currently Amended) The printing system of claim 1, wherein said virtual printer driver is supported on said ~~computing~~computer device.

6. (Currently Amended) The printing system of claim 1, wherein said ~~computing~~computer device is a client ~~computing device.~~

7. (Currently Amended) The printing system of claim 1, wherein said ~~computing~~computer device is a server ~~computing device.~~

8. (Currently Amended) The printing system of claim 1, wherein said ~~computing~~computer device is capable of determining the capabilities, status, and locality of said output devices without manual enumeration through each respective printer driver and status monitor.

9. (Original) The printing system of claim 1, wherein said print job is initiated from within an application program.

10. (Original) The printing system of claim 1, wherein said print job is initiated from a background process.

11. (Original) The printing system of claim 1, wherein said print job is initiated automatically by an automated process.

12. (Original) The printing system of claim 1, wherein said virtual printer driver comprises and displays a dialog comprising selectable options and requirements that a user may specify for said print job.

13. (Original) The printing system of claim 12, wherein said dialog comprises selectable options and requirements that are selected from the group consisting of collation, sheet assembly, finishing characteristics, image processing, job splitting, printer pooling, and intelligent routing.

14. (Currently Amended) The printing system of claim 1, wherein said virtual printer driver ascertains the capabilities, locality, if any, and status of each of said output devices accessible from said ~~computing~~computer device and displays such to said user.

15. (Original) The printing system of claim 14, wherein said virtual printer driver ascertains said capabilities, locality, if any, and status of each of said output devices prior to said displaying said capabilities and status designations to said user, such that said user may select only those features that are available on at least one of said output devices.

16. (Original) The printing system of claim 14, wherein said output devices comprise capabilities, locality, if any, and status designations selected from the group consisting of printer driver capabilities, printer firmware capabilities, printer finishing capabilities, printer queue status, printer status, and printer locality.

17. (Currently Amended) The printing system of claim 1, wherein said accessibility of said output devices and said corresponding printer drivers is determined from said output devices and said corresponding printer drivers being pre-installed on said ~~computing~~computer device.

18. (Original) The printing system of claim 1, wherein said accessibility of said output devices and corresponding printer drivers is determined from said output devices and said corresponding printer drivers being downloadable from a print server.

19. (Original) The printing system of claim 1, wherein said accessibility of said output devices and corresponding printer drivers is determined from said output devices and said corresponding printer drivers being discoverable using an auto-discovery program.

20. (Original) The printing system of claim 1, wherein said virtual printer driver queries print assist components to be incorporated into said print job.

21. (Original) The printing system of claim 1, wherein said virtual printer driver selects one or more groups of said output devices in the case of cluster printing, wherein said group comprises a single logical output device, said selection based upon an identified best fit algorithm.

22. (Original) The printing system of claim 1, wherein a user interactively selects said output device to print said print job.

23. (Currently Amended) The printing system of claim 1, wherein said printing instructions are written to said print control assembly by said ~~computing~~computer device upon a device context being switched to said selected output device at the direction of said virtual printer driver.

24. (Original) The printing system of claim 1, wherein said printing instructions are written to said virtual printer driver, said virtual printer driver subsequently plays back said printing instructions to said print control assembly.

25. (Original) The printing system of claim 1, wherein said printing instructions comprise said print data, information on said capabilities, locality, and status of said output devices, and said requirements and options of said print job.

26. (Original) The printing system of claim 1, wherein said print control assembly comprises components selected from the group consisting of at least one printer driver, a spooling device, a print processor, a port manager, and a print server.

27. (Original) The printing system of claim 1, wherein said print control assembly is contained within and supported by said output device.

28. (Currently Amended) A method of initiating a print job within a computer-based printing system, said method comprising the steps of:

generating print data within a client ~~computing~~computer device, said client ~~computing~~computer device connected to and in communication with said computer-based printing system;

making accessible to said computer-based printing system one or more output devices, such that said output devices are in communication with said computer-based printing system and said client ~~computing~~computer device;

calling a virtual printer driver from said client ~~computing~~computer device, said virtual printer driver supported on said computer-based printing system and performing the task of processing and sending said print data in a print data stream to one of said output devices for printing according to the method steps comprising:

gathering information on the capabilities, locality, if any, and status of said one or more output devices, including corresponding printer drivers associated with said respective output devices, accessible from said client ~~computing~~computer device;

displaying to said user a dialog of a plurality of options and requirements pertaining to said print job;

allowing said user to identify and select from said dialog which of said options and requirements are desired for said print job, said information on the capabilities, locality, and status of said one or more output devices and said options and requirements of said print job combining to define a set of printing instructions;

selecting one or more of said output devices by which said virtual printer driver may direct said print job, said step of selecting being based upon and according to a best fit between said capabilities and status of said output devices and said options and requirements of said print job, said best fit based on one or more identified criteria of said plurality of output devices, without manual enumeration of each respective said plurality of output devices by said client ~~computing~~computer device;

causing said printing instructions to be communicated and rendered to the corresponding printer drivers of said selected output devices by said virtual printer driver switching a device context to said corresponding printer drivers of said selected output devices, wherein an application or background process containing said print data writes said printing instructions to said corresponding printer drivers, said corresponding printer drivers then spool said print data to a spooler, which then despools said print data to a port manager or a print processor;

causing said corresponding printer drivers of said selected output devices to write said printing instructions to the corresponding port managers of said selected output devices; and

printing said print data on said selected output devices according to said printing instructions.

29. (Original) The method of claim 28, wherein said step of gathering information further comprises the step of:

querying a printer driver and corresponding print queue in each of said plurality of output devices.

30. (Original) The method of claim 28, wherein said step of calling a virtual printer driver that performs the task of processing and sending said print data in a print data stream to one of said output devices for printing further comprises the step of:

querying a print assist component selected from the group consisting of a document processing assembly, an image processing assembly, and a sheet assembly;  
inserting said print assist component into said print data stream.

31. (Original) The method of claim 28, wherein said step of selecting one or more of said output devices comprises selecting one or more groups of said output devices in the case of cluster printing.

32. (Original) The method of claim 28, wherein said step of selecting one or more of said output devices is automatically carried out by said virtual printer driver.



33. (Original) The method of claim 28, wherein said step of selecting one or more of said output devices is carried out through an interactive approach with said user.

34. (Original) The method of claim 28, wherein said step of selecting comprises automatically selecting a single printing device or group from the larger set, using an identified algorithm, if more than one printing device or group of printing devices are selected by said virtual printer driver.

35. (Original) The method of claim 34, wherein said identified algorithm is selected from the group consisting of highest output resolution, first available printer, closest in proximity, and fastest to complete.

36. (Original) The method of claim 28, wherein said step of selecting comprises said user interactively selecting a single printing device or group if more than one printing device or group of printing devices are selected by said virtual printer driver.

37. (Canceled)

38. (Currently Amended) The method of claim ~~37~~28, wherein said print processor writes said print data directly to a port manager of said selected output devices if said print data is printer ready.

39. (Currently Amended) The method of claim ~~37~~28, wherein said print processor plays back said print data to said printer drivers on said client ~~computing~~computer device if said print data is journaled print data.

40. (Currently Amended) The method of claim ~~37~~28, wherein said print processor despools said print data to a print server for deferred rendering if said print data is journaled print data.

41. (Canceled)

42. (Currently Amended) The method of claim 28, wherein said step of gathering information on the capabilities, locality, and status of said one or more output devices, including corresponding printer drivers associated with said respective output devices, accessible from said client ~~computing~~computer device causes to be limited what is displayed to said user in said dialog by only allowing said dialog to display, and said user to select, those said options and requirements that are supportable by at least one of said output devices as determined by said virtual printer driver in said step of gathering information.

43. (Canceled)

44. (Canceled)

45. (Canceled)

46. (New) A method for initiating a print job within a computer-based printing system, said method comprising:

generating print data at a computer device, which is capable of communicating with one or more output devices;

using a virtual printer driver to process and send said print data to one or more of said output devices for printing according to the method steps comprising:

gathering information relating to said one or more output devices, including corresponding printer drivers associated with said respective output devices;

displaying to said user a dialog of a plurality of options and requirements pertaining to said print job;

allowing said user to identify and select from said dialog which of said options and requirements are desired for said print job, said information on the capabilities, locality, and status of said one or more output devices and said options and requirements of said print job combining to define a set of printing instructions;

selecting one or more of said output devices by which said virtual printer driver may direct said print job, said step of selecting being based upon and according to a best fit between said capabilities and status of said output devices and said options and requirements of said print job, said best fit based on one or more identified criteria of said plurality of output devices, without manual

enumeration of each respective said plurality of output devices by said client computer device;

causing said printing instructions to be communicated and rendered to the corresponding printer drivers of said selected output devices by said virtual printer driver switching a device context to said corresponding printer drivers of said selected output devices, wherein an application or background process containing said print data writes said printing instructions to said corresponding printer drivers, and wherein one of:

(i) said corresponding printer drivers spool said print data to a spooler, which despools said print data to a port manager or a print processor; and

(ii) said virtual printer driver plays back said printing instructions to said corresponding printer drivers of said selected output devices;

causing said corresponding printer drivers of said selected output devices to write said printing instructions to the corresponding port managers of said selected output devices; and

printing said print data on said selected output devices according to said printing instructions.

47. (New) A computer program product for implementing within a computer system a method for using a virtual printer driver to process and send print data to one or more of output devices for rendering a print job within a computer-based printing system, the computer program product comprising:

a computer readable medium for providing computer program code means utilized to implement the method, wherein the computer program code means is comprised of executable code for implementing the steps for:

gathering information relating to said one or more output devices, including corresponding printer drivers associated with said respective output devices;

displaying to said user a dialog of a plurality of options and requirements pertaining to said print job;

allowing said user to identify and select from said dialog which of said options and requirements are desired for said print job, said information on the capabilities, locality, and status of said one or more output devices and said options and requirements of said print job combining to define a set of printing instructions;

selecting one or more of said output devices by which said virtual printer driver may direct said print job, said step of selecting being based upon and according to a best fit between said capabilities and status of said output devices and said options and requirements of said print job, said best fit based on one or more identified criteria of said plurality of output devices, without manual enumeration of each respective said plurality of output devices by said client computer device;

causing said printing instructions to be communicated and rendered to the corresponding printer drivers of said selected output devices by said virtual printer driver switching a device context to said corresponding printer drivers of

said selected output devices, wherein an application or background process containing said print data writes said printing instructions to said corresponding printer drivers, and wherein one of:

- (i) said corresponding printer drivers spool said print data to a spooler, which despools said print data to a port manager or a print processor; and
- (ii) said virtual printer driver plays back said printing instructions to said corresponding printer drivers of said selected output devices;  
causing said corresponding printer drivers of said selected output devices to write said printing instructions to the corresponding port managers of said selected output devices; and  
printing said print data on said selected output devices according to said printing instructions.

48. (New) A method for using a virtual printer driver to render a print job, the method comprising:

- receiving input that identifies requirements of an initiated print job;
- using a virtual printer driver to query printer devices for one or more capabilities;
- using the virtual printer driver to select one or more of the printer devices to render the print job based on matching the requirements with the capabilities;
- using the virtual printer device to switch a device context to corresponding printer drivers of the selected printer devices; and
- transmitting the print job to the selected printer devices for rendering the print job.

49. (New) A method as recited in claim 48, wherein the capabilities comprise at least one of: (i) printer driver capabilities; (ii) printer firmware capabilities; (iii) printer finishing capabilities; (iv) printer queue status; (v) printer status; and (vi) printer locality.

50. (New) A method as recited in claim 48, wherein the requirements of the print job comprise at least one of: (i) collation; (ii) sheet assembly; (iii) finishing; (iv) image processing; (v) split printing; (vi) printer pooling; and (vii) intelligent routing.